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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,796	06/19/2001	Kenneth LeVey	ITWO:0004 (12984)	4481
7590	10/16/2003		EXAMINER SCHIFFMAN, JORI	
Patrick S. Yoder Fletcher, Yoder & Van Someren P.O. Box 692289 Houston, TX 77269-2289			ART UNIT 3679	PAPER NUMBER

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,796

Applicant(s)

LEVEY ET AL.

Examiner

Jori R. Schiffman

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3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18-21, 23-28, 30-35, 37-40, 52-58, 63 and 64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-10, 15, 16, 18, 24, 25, 31, 32, 38-40, 52-55, 63 and 64 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 11-14, 19-21, 23, 26-28, 30, 33-35, 37 and 56-58 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 28 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 52-55, 63, and 64 are rejected under 35 U.S.C. 102(b) as being anticipated by Yaotani et al. (4637767).

Regarding claim 1, Figure 8 of Yaotani discloses a threaded fastener with a head 120, a tip 131, and a threaded shank 130 extending between the head and the tip, the shank having a helical lead including a plurality of bosses 150 separated by recessed bases 140, each boss extending radially beyond adjacent bases and presenting a respective profile including a lead-in profile in a direction toward the tip, a respective lead-out profile in a direction toward the head, and a central section of substantially uniform radial dimension, and the respective profiles comprising a crest profile defining a single apex.

Regarding claims 52-55, Yaotani discloses the claimed threaded fastener as above. The value of the ratios of removal torque to insertion torque is intended use and would be dependent upon the material that the screw is used with.

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Referring to claims 63 and 64, Yaotani discloses the claimed fastener as above, and further discloses each base including a central section of substantially uniform radial dimension.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaotani et al. (4637767) as applied to claim 1 above, and further in view of Hiroyuki (US 5110245).

As to the claims, Yaotani discloses the claimed fastener except for the profiles of at least two bosses differing from one another, and at least two bases differing from one another in length. Hiroyuki teaches a fastener with a thread including bosses 4b and bases 6, respective profiles of at least two bosses differing from one another and respective profiles of at least two bases differing from one another in length. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to form the profiles of at least two bosses different from one another, and at least two bases different from one another in length as disclosed in Hiroyuki to increase holding strength and resist pullout for a more secure connection.

5. Claims 9, 10, 15, 16, 18, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaotani et al. (4637767) in view of Thom (US 23409).

Regarding claims 9, 13-16, 18, 19, 25, 26, 32 and 33, Yaotani discloses the claimed fastener as above, except for a second helical lead including a plurality of second bosses and bases. Thom teaches a screw with double lead threads which allow it to be installed with one-half the number of turns. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to add a second, identical thread to Yaotani's screw as disclosed in Thom to allow it to be installed with one-half the number of turns, which would require less torque and force, and would therefore make the screw easier to install. As to claims 25 and 32, since some bosses of Yaotani are displaced from one another by 180° at generally corresponding locations along the shank, the respective first and second bosses would also be displaced from one another by 180° at generally corresponding locations along the shank and the first and second leads would be capable of providing a substantially constant insertion torque.

Referring to claim 10, modified Yaotani discloses the profiles of at least two bosses of each lead differ from one another.

As to claims 15 and 16, modified Yaotani discloses some of the bosses and bases disposed at corresponding locations along the shank, therefore when a second lead form is added some of the first bosses and second bases, as well as second bosses and first bases would be disposed at corresponding locations along the shank.

Regarding claim 24, once the combination is made, the first lead will be identical to the second lead.

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6. Claims 31 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yaotani et al. (4637767) in view of Thom (US 23409) as applied to claims 25 and 32 above, and further in view of Hiroyuki (US 5110245).

As to the claims, Yaotani discloses the claimed fastener except for the profiles of bosses of the first and second leads varying along the shank from the tip to the head. Hiroyuki teaches a fastener with a thread including bosses 4b and bases 6, respective profiles of the bosses varying along the shank. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to form the profiles of the bosses varying along the shank as disclosed in Hiroyuki to increase holding strength and resist pullout for a more secure connection.

Allowable Subject Matter

7. Claims 3, 4, 11-14, 19-21, 23, 26-28, 30, 33-35, 37, and 56-58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Regarding the claims, the prior art of record fails to disclose or suggest a threaded fastener of the type claim where the lead-in and lead-out profiles of at least two bosses differ from one another, and further fails to disclose the lead-in profiles of the first lead and lead-out profiles of the second lead are disposed at corresponding locations on the shank.

Response to Arguments

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds of rejection.

Conclusion

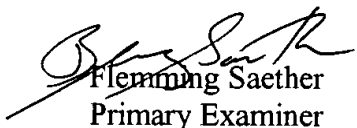
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jori R. Schiffman whose telephone number is 703-305-4805. The examiner can normally be reached on M-Th, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on 703-308-1159. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-1113.

Jori R. Schiffman
Examiner
Art Unit 3679

JS


Flemming Saether
Primary Examiner